

Approval and Communication of Refinery, Maintenance, or Engineering Instructions

Document No.: RI-362	Title: Process Safety Information	Current Date: 3/08
Action: <input type="checkbox"/> New <input checked="" type="checkbox"/> Revision <input type="checkbox"/> Cancellation		Next Revision Due: 3/2013
Responsible Organization: HES		Position to Contact With Questions/Suggestions: PSM Coordinator ext 2-1862
Summarize Rewritten Material: Address 2007 PSM Compliance Audit Recommendation: Updated Appendix I to indicate that Safety System Descriptions may be accessible via the specific section in the Electronic Operating Manuals (EOMs).		

REQUIRED COMMUNICATION/TRAINING

If Type 2 or Type 3 training is necessary – Instruction Owner is responsible for developing the training material and must work with Development Department Manager and Managers of affected personnel to coordinate training of affected personnel and documentation of training.

This document should be reviewed by:	Type 1 Simple Change	Type 2 On-The-Job Training	Type 3 Classroom Training
All Refinery Personnel	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Operations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Maintenance & Reliability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
HES	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other: Sm. & Lg. Capital Projects, Development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

APPROVALS

Instruction Owner: M. T. Brennan	Development Manager: <i>(first signature before final routing)</i> Deane Van Bockern
Operations Manager: Jay Yeager	Technical Services Manager: N/A
HES Manager: Tery Lizarraga	Maintenance & Reliability Manager: N/A
Refinery Manager: <i>(final signature)</i> Mike Coyle	Other Manager: N/A

On Completion – Instruction Owner will send file and message to IPC to post on the Refinery server.

Necessary Approval for Instructions:

- | | |
|---|---|
| <ul style="list-style-type: none"> • Refinery Instructions: • Safe Work Practices: • Emergency Plans (400 Series RIs): • Engineering Instructions: • Maintenance Instructions: • Cancellation of Instruction: | <ul style="list-style-type: none"> Development, Operations, HES, and Refinery Manager Development, Operations, Maintenance & Reliability, HES, and Refinery Manager Development, Operations, Maintenance & Reliability, HES, and Refinery Manager Technical and HES Manager Maintenance & Reliability and HES Manager RI Owner and Refinery or Operations Manager |
|---|---|

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RICHMOND REFINERY INSTRUCTIONS

***PROCESS SAFETY MANAGEMENT**

PROCESS SAFETY INFORMATION

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APPENDIXES:

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- P&ID UPDATE PROCESS
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- PIPING ISO UPDATE PROCESS

RICHMOND REFINERY INSTRUCTIONS

PROCESS SAFETY MANAGEMENT

PROCESS SAFETY INFORMATION

1.0 PURPOSE

This Instruction is intended to document and communicate the actions Chevron's Richmond Refinery will take to satisfy the following Process Safety Information (PSI) regulatory requirements:

- US Federal EPA requirements of 40 CFR Part 68 – Prevention Program Elements for the Risk Management Plan (RMP)
- California Office of Safety Health Administration (OSHA) Process Safety Management (PSM), Title 8, § 5189
- California Accidental Release Prevention (Cal/ARP) Program, Title 19, § 2760
- City of Richmond Industrial Safety Ordinance (RISO) 42-01 § 6.43

2.0 SCOPE

This Instruction:

- 2.1 Provides a list of documents that will constitute the Refinery's PSI.
- 2.2 Assigns an owner for each PSI document type.
- 2.3 Defines the primary method(s) to access this information.
- 2.4 Defines the process to ensure this information remains current and accurate.

3.0 PSI DOCUMENTS

- 3.1 PSI documents are intended to provide employees involved in operating the process information to understand the hazards associated with processes involving regulated substances.
- 3.2 Appendix I is a listing of Refinery documents that fulfill PSI requirements, the owners of those documents, and the location where the PSI can be found.

4.0 PSI DOCUMENT CONTENT/FORMAT

The content and format of each document shall be consistent with the regulatory requirements and be managed by the PSI Owner.

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5.0 CHANGE MANAGEMENT

5.1 Existing PSI

Changes that impact existing Process Safety Information will trigger the Management of Change Process (MOC). This is done to ensure that modified PSI remains current and is available.

5.2 Create/Acquire New PSI

PSI records are created during the engineering phase of a project or are obtained from the contractor or equipment vendor. PSI shall be in-place prior to start up of a new or modified facility. In the case of MSDSs, that information shall be in-place prior to the chemicals entering the Refinery.

6.0 MANAGEMENT SYSTEM

6.1 Ongoing Compliance

The CAP Database identifies the positions responsible to maintain compliance with the requirements of PSI.

6.2 Compliance Audits

At least once every three years, as part of the PSM compliance audit, this process shall be audited. Audits will determine areas for improvement and plans to address them.

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APPENDIX I PROCESS SAFETY INFORMATION

PSI Element	Refinery Document	PSI Owner Department/Position	Location to Access Information
MATERIALS IN THE PROCESS			
Hazardous and flammable materials used [1]	(MSDS's)	HES Safety Team Leader	Intranet (EOM)
TECHNOLOGY OF THE PROCESS			
Block Flow Diagram	Process Flow Diagrams	Technical Process Engineering Manager	Intranet (EOM)
Process Chemistry	Process Chemistry (EOM)	Technical Process Engineering Manager	Intranet (EOM)
Maximum Intended Inventory	Maximum Intended Inventory	Technical Process Engineering Manager	Intranet (EOM)
Safe Upper and Lower Limits	Safe Upper and Lower Limits	Technical Design Engineering Manager	Intranet (EOM)
Consequences of Deviation	Consequences of Deviation	Technical Process Engineering Manager	Intranet (EOM)
EQUIPMENT IN THE PROCESS			
Materials of Construction	Safety Instruction Sheets / Equipment Data Sheets Refinery Pipe Classification	Technical Design Engineering Manager	Design Engineering Library
Piping and Instrument Diagrams	Piping & Instrumentation Diagrams (P&ID's)	Capital Projects Drafting Supervisor	Intranet (EOM)
Electrical Classification	Area Classification Drawings	Technical Lead Electrical Engineer	Intranet (EOM)
Relief System design & Design Basis	Pressure Relief Design Data Sheet, System Diagram, and System Design	Technical Design Engineering Manager	RFMS Web-Site Chevron Equipment Information System
Ventilation System Design	Process Area Buildings Ventilation System Design	Technical Design Engineering Manager	Intranet (EOM)
Design Codes & Standards Employed and Design Conditions	P&ID's, SIS, EDS	Technical Design Engineering Manager	Chevron Equipment Information System
Operating Limits	COD Tables	Technical Design Engineering Manager	Intranet (EOM)
Material & Energy balances	Material and Energy Balances	Technical Process Engineering Manager	Intranet (EOM)
Electrical Supply & Distribution Systems	Electrical One-Lines	Capital Projects Drafting Supervisor	Intranet (EOM)
Safety Systems * (Descriptions)	SIS Sheets * (Descriptions accessed via the specific section in the EOM)	Technical Design Engineering Manager	Chevron Equipment Information System
Equipment compliance with recognized and generally accepted good engineering practices	SIS Sheets	Technical Design Engineering Manager	PEIS or Meridium (Reliability Computer System)
Equipment built to noncurrent codes	SIS Sheets	Technical Design Engineering Manager	PEIS or Meridium (Reliability Computer System)

Footnotes:

[1] Includes Toxicity, Permissible Exposure Limits, Physical Data, Corrosively Data, Thermal & Corrosively Data, Hazardous effects of inadvertently mixing of different materials that could foreseeable occur.

This information shall be made readily assessable for employees participating in PHA's, without regards to possible trade secrets.

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APPENDIX II PROCESS SAFETY INFORMATION

DEFINITIONS

1.0 MATERIALS IN THE PROCESS

Hazardous and Flammable Materials Used – Material Safety Data Sheets (MSDS) provide information on specific materials used in the plant including toxicity, permissible exposure limits, physical data, corrosively data, thermal & corrosively data, and hazardous effects of inadvertently mixing of different materials that could foreseeable occur data. MSDSs also include substance identification, emergency telephone number, health effects and first aid for exposure, protective equipment, fire-fighting information, environmental concerns, storage and handling information, physical and chemical properties, spill response and disposal, and exposure and regulatory standards.

2.0 TECHNOLOGY OF THE PROCESS

- 2.1 **Block Flow Diagram or Process Flow Diagrams** are used to show the major process equipment and interconnecting process flow lines and show flow rates, stream composition, temperatures, and pressures when necessary for clarity. The block flow diagram is a simplified diagram.
- 2.2 **Process Chemistry** describes the basic chemical elements involved in the plant process and the mechanisms and or reactions that occur which change the process chemistry to achieve the desired results.
- 2.3 **Maximum Intended Inventory** describes the physical equipment volume limits specified by the manufacturer.
- 2.4 **Safe Upper and Lower Limits** are required for such items as temperatures, pressures, flows, levels, or compositions based upon the design codes and standards employed and design conditions. Refer to Materials of Construction section.
- 2.5 **Consequences of Deviations** depict the likely results from exceeding the safe upper and lower limits and the steps necessary to return the process to operation within the established limits. Refer to Materials of Construction section.

3.0 EQUIPMENT IN THE PROCESS

- 3.1 **Materials of Construction** – Equipment Design Data Sheets and Safety Instruction Sheets (SIS) contain information related to specific equipment (vessels, pumps and drivers, compressors, heat exchangers, process furnaces, etc.). Equipment Design Data Sheets contain all of the information required for

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the manufacturer to know full design and construction needs, including detailed process information. The Safety Instruction Sheet is more pointed information at the construction and safety limits of the equipment. Materials of construction and manufacturer are identified as well as dimensions, safe upper and lower operating limits (temperature, pressure, etc.), and safety systems. Design and construction codes are identified where relevant.

- 3.2 **Piping Classification Manual** contains pipe classification sheets which identify the standards for piping systems and components. The pipe class sheets are based on fluid service type, pressure boundary design codes (pressure, temperature, materials of construction, thickness including corrosion allowance), and component configuration, reliability, and cost effectiveness.
- 3.3 **Piping and Instrument Diagrams (P&IDs)** show the process and utility flow through the plant and all lines, equipment, and instrumentation. P&IDs also show equipment design and limits data, primary process flow, piping classification, insulation classification, routing of lines with permanent blinds, valves, and normally open/closed and locked open/closed valves.
- 3.4 **Electrical Area Classification Drawings** are area plan drawings intended for use only to select the proper type of electrical equipment to use in an area. The purpose of area classification is to identify locations where electrical equipment could, unless special precautions are taken, provide a source of ignition to any flammable liquids, gases, or vapor that may be present.
- 3.5 **Pressure Relief Device Data Sheets and Pressure Relief System Diagrams** identify the design basis for pressure relief devices and systems. They include pressure relief device data (flow sizing data, manufacturer, style, and components), system hydraulics, and failure cases considered in determining relief loads.
- 3.6 **Ventilation System Design** – Existing systems, new construction, and modifications to existing ventilation systems must comply with requirements given in State Safety Orders, Title 24. The documentation for new or modified ventilation systems must be part of the permit review under the Certified Inspection Program with the city of Richmond.
- 3.7 **Design Codes and Standards Employed and Design Conditions** are documented on SI Sheets or Equipment Data Sheets for most types of fixed and rotating equipment. Refer to RI-368, Mechanical Integrity.

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- 3.8 **Material and Energy Balances** – The material balance is intended for ensuring the proper design basis for the equipment. For example, it is necessary to know the flow rate in mass per unit time to properly design a heat exchanger; however, this flow rate does not give the mass of the substance consumed or lost in a reaction system.
- 3.9 **Safety Systems** are the devices and systems whose primary function is to prevent or minimize the catastrophic release of toxic, reactive, flammable, or explosive chemicals.
- 3.10 **Electrical One-Line Drawings** are schematic drawings that use standard symbols and nomenclature to illustrate the overall electrical distribution system configuration. For the operating plants, the drawings track power flow from the source transformer(s) through to the plants' electrical equipment.
- 3.11 **Equipment Compliance with Recognized and Generally Accepted Good Engineering Practices** – A combination of Instructions that includes RI-368, "Mechanical Integrity," RI-370, "Management of Change," and this Instruction, RI-362, "Process Safety Information," provide a procedural basis for document approval and storage. This documentation includes the equipment compliance information with the given criteria in accordance with recognized and generally accepted good engineering practices.
- 3.12 **Equipment Built to Noncurrent Codes** – For existing equipment designed and constructed many years ago in accordance with the codes and standards available at that time and no longer in general use today, the employer must document which codes and standards were used and that the design and construction along with the testing, inspection, and operation are still suitable for the intended use. Where the process technology requires a design which departs from the applicable codes and standards, the employer must document that the design and construction is suitable for the intended purpose.